

CLAIMS

1. A heat reflection device for footwear, the device comprising a first layer of fluid-impervious material, a second layer of fluid-impervious material and a sac arranged between the first and second layers, the sac containing a heat reflective material therein; (in use the device is positioned in relation to the sole of the footwear so the at least some heat conducted or convected through the sole is reflected away from a foot of a wearer of the footwear.)
2. The device according to claim 1 wherein the heat reflective material is a mixture having a quantity of heat reflective powder or particulate and a quantity of thickening agent.
3. The device according to claim 2 wherein the heat reflective powder or particulate is one or a combination of two or more materials selected from titanium dioxide, zirconium and zinc oxide.
4. The device according to claim 2 or 3 wherein the powder or particulate is between 10 to 50% of the mixture.
5. The device according to any one of claims 2 to 4 wherein the powder or particulate is of paint grade particle size.
6. The device according to any one of claims 2 to 5 wherein the mixture having a quantity of fluid so that it is flowable.
7. The device according to any one of claims 2 to 6 wherein the heat reflective powder or particulate is one or a combination of two or more materials selected from titanium dioxide, zirconium and zinc oxide.
8. The device according to any one of claims 2 to 7 wherein the powder or particulate is between 10 to 50% of the mixture.
9. The device according to any one of claims 2 to 8 wherein the powder or particulate is of paint grade particle size.
10. The device according to any one of claims 2 to 9 wherein the thickening agent is between 30 to 90% of the mixture.
11. The device according to any one of claims 1 to 10 wherein the thickening agent is one or a combination of two or more materials selected from bentonite, attapulgite and celluloses.

12. The device according to claim 6 wherein the fluid is added to a quantity so that the mixture is of a flow quality that allows the device to provide a therapeutic effect on the foot when the sac is pressed.

sub A2 → 13. The device according to any one of claims 1 to 12 wherein the device is formed to be generally in the shape of a foot and the sac extending from about the heel region to about the toe or ball region of the foot.

14. The device according to claim 13 wherein the first and second layers are flexible and made of an impervious material.

15. The device according to claim 14 wherein the impervious material is Polyurethane or another plastic material. -512

sub A3 → 16. The device according to any one of claims 13 to 15 wherein the device is reversible so that either surface of the first and second layers can be used.

17. The device according to any one of claims 13 to 16 wherein the layers are sealingly joined around the edges thereof by adhesive, fusion, welding or any other known technique.

18. The device according to claim 17 wherein radio frequency (RF) welding is employed for the joining the edges.

sub A4 → 19. The device according to claim 17 or 18 wherein the sac is also formed during joining of the edges and the sac extending to about the ball region

20. The device according to claim 19 wherein the device having an additional joint extending substantially laterally in the ball region.

sub A5 → 21. The device according to any one of claims 1 to 20 wherein the device is a sole or a removable inner sole for the footwear.

22. The device according to claim 21 wherein the sole or the inner sole having spaced markings for different shoe sizes so that it can be trimmed according to a marking for a desired size.